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A MAJOR RANGE EXTENSION FOR HARD BEECH (*NOTHOFAGUS TRUNCATA*) IN THE SOUTH ISLAND (NOTE)

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ABSTRACT

The presence of hard beech (*Nothofagus truncata*) is recorded in South Westland.

Hard beech (*Nothofagus truncata*) has been found recently at five localities near the Arawata and Waiatoto Rivers, South Westland. The previously known southern limit for the species was a small, isolated stand at Blackwater Creek near Kumara (map reference NZMS1 S50 & 51 775698) which is 260 km to the north of the South Westland localities. This stand is an outlier to an extensive area of distribution in the North Westland-Nelson region (Hinds and Reid 1957). Holloway (1954) recorded the other three species of *Nothofagus* in South Westland, but did not mention hard beech.

The locations and details of the stands are shown in Table 1 and Figure 1. Further finds may be anticipated at similar sites, for example, on Gill Hill north of the Waiatoto River.

Table 1. HARD BEECH STANDS IN SOUTH WESTLAND.

Stand No. (see Fig. 1)	Location	Map reference (NZMS1 S97)	Extent
1	Nisson Hill	634 954	5 ha
2	Mount McLean	578 933	several trees
3	MacFarlane Mound	572 917	1 ha
4	Arawata	545 914	0.1 ha
5	Arawata Bridge	564 903	single tree

A collection of adult leaves demonstrated the presence of hybrid (presumed *N. truncata* x *solandri* var. *cliffortoides*) as well as pure forms in each stand. The single tree near the Arawata Bridge was a hybrid. Specimens have been deposited at the Botany Division, Department of Scientific and Industrial Research Herbarium (CHR).

All stands occur on low hills adjoining or protruding from the low-lying coastal plain, chiefly on north and west facing slopes, and within an altitudinal range of 30 m to 90 m a.s.l.

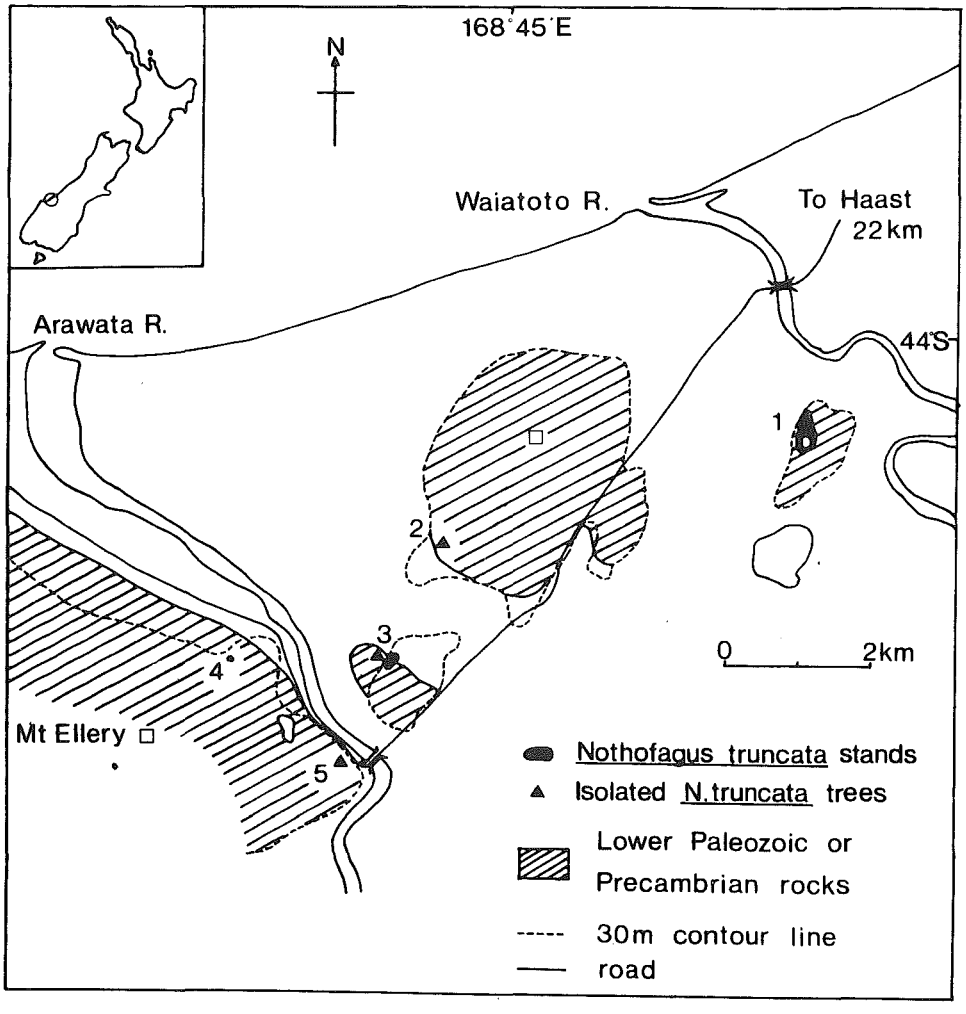

Fig. 1. Localities for *Nothofagus truncata* in South Westland, New Zealand.

In each case, the parent material is mapped as Lower Paleozoic or Precambrian rock (Mutch and McKellar 1964). Soils are shallow, well-drained and appear strongly leached.

The forest communities associated with hard beech range from tall forest where *Dacrydium cupressinum, Metrosideros umbellata, Nothofagus menziessi, N. solandri* var. *cliffortoides* and *N. truncata* are codominant, to low forest with *M. umbellata, D. colensoi. D. intermedium, N. solandri* var. *cliffortoides* and *N. truncata* codominant.

Extensive glaciation, temperature depression and the slow migration rates of *Nothofagus* have been held responsible for the absence of *Nothofagus* in much of south Westland (Willett 1950). Although the coastal plain between the Arawata and Waiatoto Rivers is mapped as being covered by a continuous ice sheet during the Otiran Glaciation (N.Z. Geological Survey, 1973) the present distribution of *Nothofagus* forest indicates that forest

vegetation was able to survive the glacial period within the area. The hard beech stands, therefore, point to the location of a number of vegetation refugia where trees and other plants could have escaped the influence of the ice cover.

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